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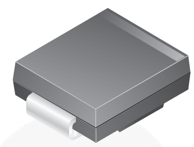
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

May 2015

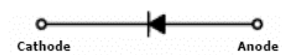
S3A - S3N
General-Purpose Rectifiers

Features

- Low-Profile Package
- Glass-Passivated Junction
- UL Flammability Classification: 94V-0
- UL Certified, UL #E258596



SMC/DO-214AB
COLOR BAND DENOTES CATHODE



ELECTRICAL SYMBOL

Ordering Informations

Part Number	Top Mark	Package	Packing Method
S3A	S3A	DO-214AB (SMC)	Tape and Reel
S3B	S3B	DO-214AB (SMC)	Tape and Reel
S3D	S3D	DO-214AB (SMC)	Tape and Reel
S3G	S3G	DO-214AB (SMC)	Tape and Reel
S3J	S3J	DO-214AB (SMC)	Tape and Reel
S3K	S3K	DO-214AB (SMC)	Tape and Reel
S3M	S3M	DO-214AB (SMC)	Tape and Reel
S3N	S3N	DO-214AB (SMC)	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values at are T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value								Unit
		S3A	**S3B**	**S3D**	**S3G**	**S3J**	**S3K**	**S3M**	**S3N**	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	1200	V
$I_{F(AV)}$	Average Rectified Forward Current, T_L = 105°C	3.0								A
I_{FSM}	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	100								A
T_{STG}	Storage Temperature Range	-55 to +150								°C
T_J	Operating Junction Temperature Range	-55 to +150								°C

Thermal Characteristics[1]

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	2.6	W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	100	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction-to-Lead	13	°C/W

Note:

1. Device is mounted on FR-4 PCB 0.013 mm. Land pattern size: refer to the package drawing. Trace size: force line = 50 mil & sense line = 4 mil.

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Value								Unit
			S3A	S3B	S3D	S3G	S3J	S3K	S3M	S3N	
V_F	Maximum Forward Voltage	I_F = 3.0 A	1.2								V
t_{rr}	Maximum Reverse Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	2.5								µs
I_R	Maximum Reverse Current at rated V_R	T_A = 25°C	5								µA
		T_A = 125°C	250								
C_T	Typical Total Capacitance	V_R = 4.0 V, f = 1.0 MHz	60								pF

Typical Performance Characteristics

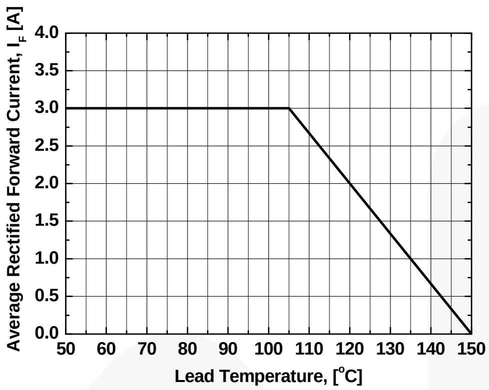


Figure 1. Forward Current Derating Curve

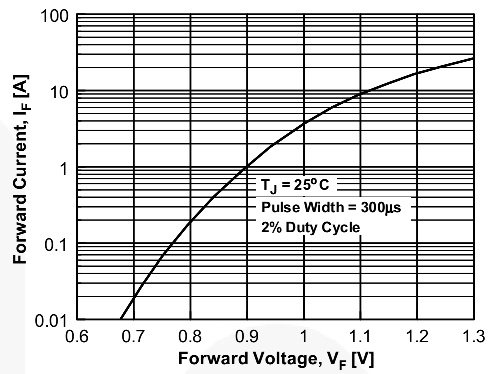


Figure 2. Forward Voltage Characteristics

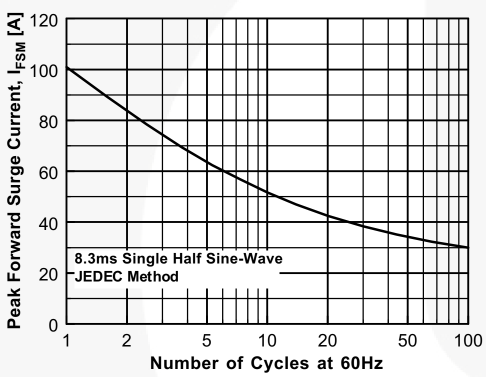


Figure 3. Non-Repetitive Surge Current

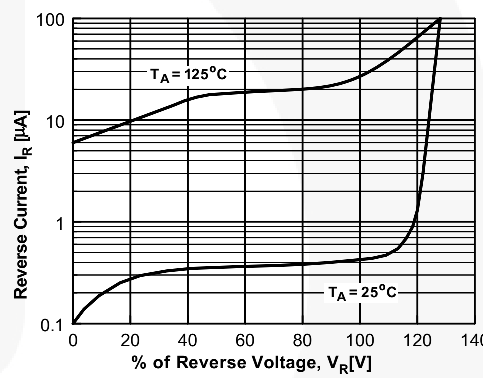


Figure 4. Reverse Current vs. Reverse Voltage

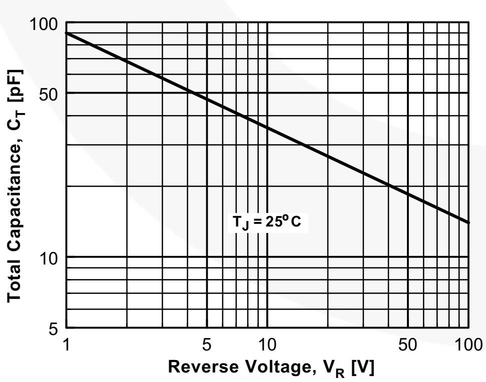
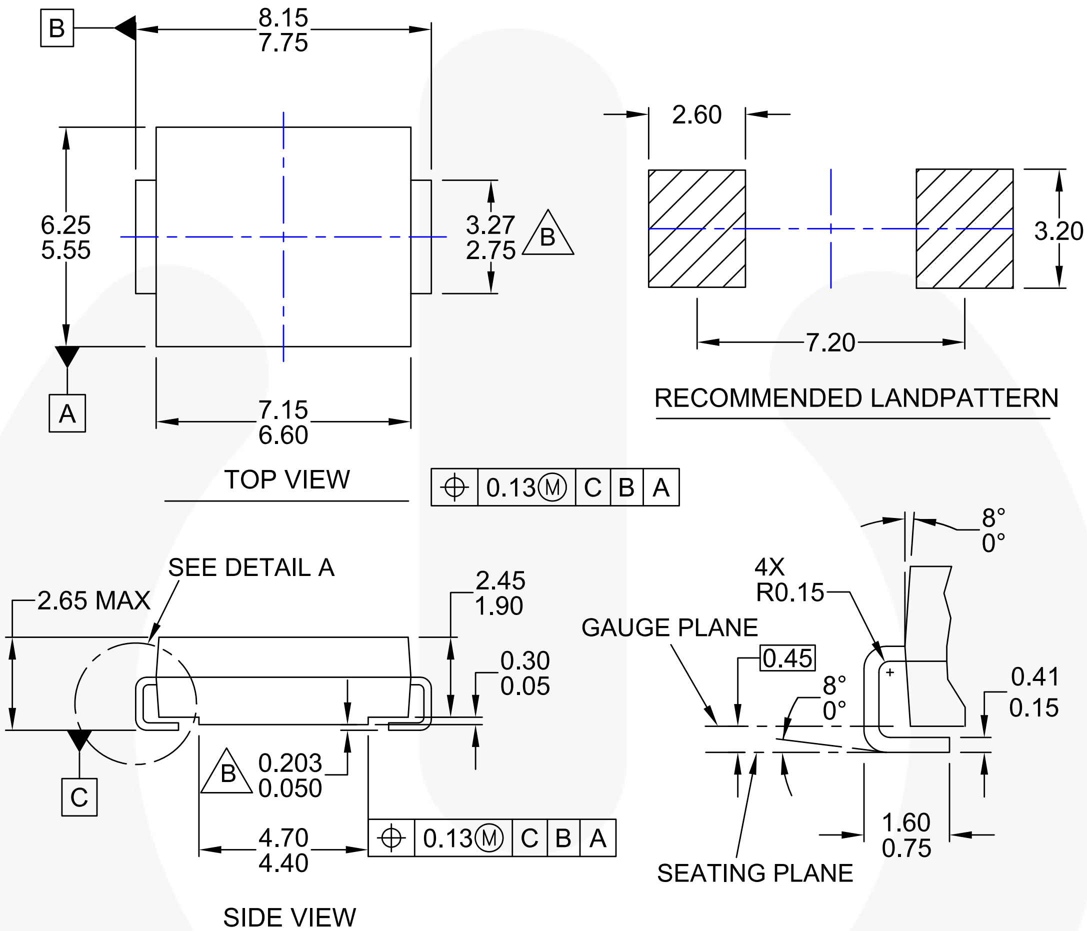


Figure 5. Total Capacitance

Physical Dimensions



NOTES:

A. EXCEPT WHERE NOTED CONFORMS TO JEDEC DO-214, VARIATION AB.

B. DOES NOT COMPLY TO JEDEC STD. VALUE.

C. ALL DIMENSIONS ARE IN MILLIMETERS.

D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.

E. DIMENSIONS AND TOLERANCING AS PER ASME Y14.5M-1994

F. LAND PATTERN STANDARD: DIOM7957X241M

G. DRAWING FILE NAME: DO214ABREV1

Figure 6. 2-Lead, SMC, JEDEC DO-214, Variation AB

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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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